WHAT IS CLAIMED IS:

1. A semiconductor device provided with high concentration source/drain layers of the reverse conductive type formed in a semiconductor layer of one conductive type, a gate electrode formed on a channel layer located between the source and drain layers, a body layer of one conductive type formed in the vicinity of the source layer and a low concentration drain layer of the reverse conductive type formed between the channel layer and the drain layer, wherein:

said body layer is formed only under said gate electrode.

2. A semiconductor device, according to claim 1, wherein the device comprises:

a gate electrode formed on a semiconductor layer of one conductive type via a gate oxide film;

a high concentration source layer of the reverse conductive type formed so that it is adjacent to one end of said gate electrode;

a high concentration drain layer of the reverse conductive type formed apart from the other end of said gate electrode;

a low concentration drain layer of the reverse conductive type extended from under said gate electrode and formed so that said low concentration drain layer of the reverse conductive type surrounds said drain layer of the reverse conductive type;

and

a body layer of one conductive type under said gate electrode formed between said source layer of the reverse conductive type and said drain layer of the reverse conductive type.

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3. A semiconductor device, according to claim 1, wherein the device comprises:

a gate electrode formed on a semiconductor layer of one conductive type via a gate oxide film;

high concentration source/drain layers of the reverse conductive type formed apart from said gate electrode; and

low concentration source/drain layers of the reverse conductive type formed so that they respectively surround said source/drain layers of the reverse conductive type and parted by a body layer of one conductive type formed under said gate electrode.

4. A semiconductor device according to Claim 1, wherein:

said low concentration drain layer of the reverse conductive type or said low concentration source/drain layers of the reverse conductive type are formed so that they are shallow under said gate electrode and are deep under said high concentration drain layer of the reverse conductive type or said high concentration source/drain layers of the reverse

conductive type.

5. A semiconductor device, according to claim 1, wherein a reverse conductive type layer is formed in a surface portion of the body layer.

6. A method of manufacturing a semiconductor device provided with high concentration source/drain layers of the reverse conductive type formed in a semiconductor layer of one conductive type, a gate electrode formed on a channel layer located between the source and drain layers, a body layer of one conductive type formed in the vicinity of the source layer and a low concentration drain layer of the reverse conductive type formed between the channel layer and the drain layer, wherein the step of forming a body layer of one conductive type comprises a step of doping impurities of one conductive type into said semiconductor layer by ion implantation.

7. A method of manufacturing a semiconductor device provided with high concentration source/drain layers of the reverse conductive type formed in a semiconductor layer of one conductive type, a gate electrode formed on a channel layer located between the source and drain layers, a body layer of one conductive type formed in the vicinity of the source layer and a low concentration drain layer of the reverse conductive type formed between the channel layer and the drain layer , comprising the steps of :

doping impurities of the reverse conductive type into said semiconductor layer to form a low concentration drain layer of the reverse conductive type;

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doping impurities of the reverse conductive type into said semiconductor layerto form a high concentration source layer of the reverse conductive type so that the source layer is adjacent to one end of said gate electrode and form a high concentration drain layer of the reverse conductive type in a position apart from the other end of said gate electrode;

doping impurities of one conductive type into said semiconductor layer to form a body layer of one conductive type extended from under one end of said gate electrode and formed so that the body layer is adjacent to said source layer of the reverse conductive type; and

forming a gate electrode on a gate oxide film after the gate oxide film is formed on said semiconductor layer.

8. A method of manufacturing a semiconductor device according to Claim 7, further comprising a step of doping an impurity for forming a reverse conduction type layer by ion implantation.

9. A method of manufacturing a semiconductor device according to Claim 7, wherein:

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said low concentration drain layer of the reverse conductive type or said low concentration source/drain layers

of the reverse conductive type are formed so that they are shallow under said gate electrode and they are deep under said high concentration drain layer of the reverse conductive type or said high concentration source/drain layers of the reverse conductive type.

10. A method of manufacturing a semiconductor device, comprising the steps of:

doping impurities of the reverse conductive type into a semiconductor layer of one conductive type to form low concentration source/drain layers of the reverse conductive type;

doping impurities of the reverse conductive type into said semiconductor layer and forming a layer of the reverse conductive type which ranges to said source/drain layers of the reverse conductive type and is shallower than said source/drain layers of the reverse conductive type;

doping impurities of the reverse conductive type into said source/drain layers of the reverse conductive type to form high concentration source/drain layers of the reverse conductive type;

doping impurities of one conductive type into said layer of the reverse conductive type to form a body layer of one conductive type; and

forming a gate electrode on a gate oxide film so that the

gate electrode covers said body layer of one conductive type after the gate oxide film is formed on said substrate.

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11. A method of manufacturing a semiconductor device according to Claim 10, further comprising a step of doping an impurity for forming a reverse conduction type layer by ion implantation after forming the body layer.

12. A method of manufacturing a semiconductor device, comprising the steps of:

doping impurities of the reverse conductive type into a semiconductor layer of one conductive type to forma low concentration layer of the reverse conductive type;

doping impurities of the reverse conductive type into said layer of the reverse conductive type to form high concentration source/drain layers of the reverse conductive type;

doping impurities of one conductive type into said layer of the reverse conductive type to form a body layer of one conductive type;

forming a first gate electrode for a first MOS transistor on a gate oxide film after the gate oxide film is formed on said substrate and forming a second gate electrode for a second MOS transistor on said body layer of one conductive type; and

forming source/drain layers of the reverse conductive type so that they are adjacent to said first gate electrode using

a resist film coating an area except are as where source/drain layers for said first MOS transistor are formed as a mask.

13. A method of manufacturing a semiconductor device according to Claim 12, further comprising a step of doping an impurity for forming a reverse conduction type layer by ion implantation.

14. A method of manufacturing a semiconductor device, comprising the steps of :

a doping impurities of the reverse conductive type into a semiconductor layer of one conductive type by ion implantation to form low concentration source/drain layers of the reverse conductive type;

doping impurities of the reverse conductive type into said semiconductor layer by ion implantation to form a layer of the reverse conductive type which ranges to said source/drain layers of the reverse conductive type and is shallower than said source/drain layers of the reverse conductive type;

doping impurities of the reverse conductive type into said source/drain layers of the reverse conductive type by ion implantation to form high concentration source/drain layers of the reverse conductive type;

doping impurities of one conductive type into said layer of the reverse conductive type by ion implantation to form a body layer of one conductive type;

forming a first gate electrode for a first MOS transistor on a gate oxide film after the gate oxide film is formed on said substrate to form a second gate electrode for a second MOS transistor on said body layer of one conductive type; and

forming source/drain layers of the reverse conductive type so that they are adjacent to said first gate electrode using a resist film coating an area except areas where the source/drain layers for said first MOS transistor are formed as a mask.

15. A method of manufacturing a semiconductor device according to Claim 14, further comprising a step of doping an impurity for forming a reverse conduction type layer by ion implantation.

16. A method of manufacturing a semiconductor device according to Claim 7, wherein said step of doping impurities of one conductive type into said semiconductor layer to form a body layer comprise a step of doping by ion implantation.

17. A method of manufacturing a semiconductor device according to Claim 10, wherein said step of doping impurities of one conductive type into said semiconductor layer to form a body layer comprise a step of doping by ion implantation.

18. A method of manufacturing a semiconductor device according to Claim 12, wherein said step of doping impurities of one conductive type into said semiconductor layer to form

a body layer comprise a step of doping by ion implantation.

b2 19. A method of manufacturing a semiconductor device according to Claim 14, wherein said step of doping impurities of one conductive type into said semiconductor layer to form a body layer comprise a step of doping by ion implantation.

d1 20. A method of manufacturing a semiconductor device according to Claim 12, wherein:

said first MOS transistor is a micro MOS transistor; and

said second MOS transistor is a MOS transistor having high resistance to voltage.

21. A method of manufacturing a semiconductor device according to Claim 14, wherein:

said first MOS transistor is a micro MOS transistor; and

said second MOS transistor is a MOS transistor having high resistance to voltage.

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